

# Tasks for October–November 2002

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## 1 Pre-beam Items

1. Check C7, D1, D4, D7, E1 Bump waveforms. Check polarities.
2. Check C8, F8, B4, E4 Sextupole waveforms. Check tracking with horizontal chromaticity string. Check polarities.
3. Check Dump Bump (A7, B2, C1, C4) waveform. Check polarities.
4. Check Tune Quad waveforms and response to rapid change in requested current.
5. Checkout Booster BPM system with signals applied to “cal rings”.
6. Checkout new WCM at B6.
7. Vertical survey and re-alignment of Booster.
8. Final inspection of B6 dump and D3 and D6 septum magnets.
9. Final inspection of Cap over B6 Dump.
10. Final inspection of C1 cable penetrations.
11. Final Inspection of Booster and BAF berms.
12. Develop fault study plan for deuteron operation. Produce losses on the new dump at B6, on the D6 septum, and near the C1 cable penetrations. Measure radiation levels on berm over B6, C1, and D6. Measure radiation levels in the BAF tunnel with loss on D6 septum. Measure radiation levels in TTB/HEBT cross-over region with loss on B6 dump.

13. Radiation Safety Checkoff List for deuteron operation completed.
14. Develop Deuteron-Gold Mode Switching application.

## **2 October 7, 8, 9 (Gold Setup)**

1. Inject and Accelerate  $\text{Au}^{32+}$  in Booster (FY2001 setup).
2. Setup coupled injection with new tune quad power supplies.
3. Setup capture, counter phasing, and acceleration with new RF function generators.

## **3 October 10, 11, 12, 13 (Gold Setup)**

1. Setup Booster extraction and transport to AGS.
2. Setup AGS injection with one transfer from Booster.
3. Accelerate to RHIC injection energy ( $\gamma = 10.520480$ ).
4. Commission new Orbit Acquisition System.
5. Calibrate C7, D1, D4, D7, E1 Bumps. Calibrate Dump Bump.
6. Measure Booster tunes and compare with model.
7. Measure chromaticities and compare with model.
8. Determine charge state distributions of beam stripped with new stripping foils. Measure debunching time on AGS injection porch to determine beam energy spread.
9. Work on new eight-transfer scheme.

## **4 October 14, 15, 16 (Gold Setup)**

1. Setup AGS extraction and ATR transport.
2. Continue work on new eight-transfer scheme.

3. Continue Booster Orbit Acquisition Commissioning.
4. Continue bump calibration work.
5. Continue stripping foil studies.

## 5 October 17, 18, 19, 20 (Deuteron Setup)

1. Tandem switch to deuteron operation.
2. Transport deuterons to Booster.
3. Inject and establish early acceleration.
4. Conduct fault studies in Booster (B6 Dump, C1 cable penetrations, D6 septum).
5. Setup Booster extraction and transport to AGS.
6. Setup AGS Injection. Accelerate to RHIC injection rigidity.
7. Setup AGS Extraction and ATR transport.

## 6 October 21–25 (Iron for BAF)

1. Tandem switch to iron operation.
2. Transport  $\text{Fe}^{20+}$  to Booster.
3. Setup Booster injection with  $Q_H = 4.75$  and  $Q_V = 4.77$  on short magnetic cycle.
4. Accelerate to  $\text{Au}^{32+}$  extraction rigidity on  $h = 3$ .
5. Setup Booster injection with  $Q_H = 4.423$ ,  $Q_V = 4.443$  on short magnetic cycle. Move to  $Q_H = 4.38$ ,  $Q_V = 4.55$  at end of injection. Accelerate to  $\text{Au}^{32+}$  extraction rigidity.
6. Setup long magnetic cycle for acceleration to 1000 MeV per nucleon. Inject with  $Q_H = 4.423$  and  $Q_V = 4.443$ . Move to  $Q_H = 4.38$ ,  $Q_V = 4.55$  at end of injection.
7. Accelerate to 1000 MeV per nucleon with  $Q_H = 4.38$  and  $Q_V = 4.55$ .

8. Setup extraction bumps.
9. Setup resonant extraction.

## **7 November 4, 5, 6 (Iron setup for NASA)**

1. Transport  $\text{Fe}^{10+}$  to Booster.
2. Setup Booster Injection and Acceleration.
3. Setup Booster extraction and BTA transport.
4. Setup AGS Injection and Acceleration.
5. Setup AGS Extraction and transport to NASA.

## **8 November 7–21 (Iron for NASA)**

1. Deliver  $\text{Fe}^{26+}$  at 5 GeV per nucleon.
2. Deliver  $\text{Fe}^{26+}$  at 1 GeV per nucleon.